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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/058,781 | 01/30/2002 | Sunao Kakizaki | 520.41122X00 | 4152 |

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EXAMINER

KIM, DAVID S

ART UNIT PAPER NUMBER

2613

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/058,781

Applicant(s)

KAKIZAKI ET AL.

Examiner

David S. Kim

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) 7-10 and 18-20 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5, 6, 15 and 17 is/are allowed.
- 6) ☒ Claim(s) 11 and 12 is/are rejected.
- 7) ☒ Claim(s) 13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Applicant's compliance with the objections to claims 2 and 15-16 in the previous Office Action (mailed on 12 April 2006) is noted and appreciated. Applicant response included the cancellation of claims 2 and 16 and amendments to claim 15. Applicant's response overcomes the previous objections, which are presently withdrawn.

2. **Claim 13** is objected to because of the following informalities:

In claim 13, there is no antecedent basis for "the CPU".

Appropriate correction is required.

Allowable Subject Matter

3. **Claims 5-6, 15, and 17** are allowed.

4. The indicated allowability of **claims 11-12** is withdrawn in view of the newly discovered reference(s) to Liu (U.S. Patent No. 6,704,508 B1). Rejections based on the newly cited reference(s) follow.

5. **Claims 13-14** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Liu

7. **Claims 11-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu.

Regarding claim 11, Liu discloses:

An optical switching method (e.g., Fig. 5) enabling detection of reflected light, the method comprising the steps of:

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making a setting for switching an optical switch and storing optical interconnection relationships (“fault location” in col. 8, l. 67 implies knowing the optical interconnection relationships of switch 506 so that one knows which fiber 520-521 is being tested);

making a selection of a circuit board (selection implied by control of switch 506 by controller 508; selection also implied by management of Fig. 5 by Operational Support System OSS in Fig. 1) on which optical switching devices are mounted according to a command from an operation control unit (control by controller 508; management by OSS in Fig. 1); and

locating positions of reflection (OTDR locates positions of reflection by back-reflected OTDR pulses) according to the optical interconnection relationships (position is further identified through knowing which switch ports are connected for testing which fiber 520-521).

Liu does not expressly disclose:

storing an optical reflection alarm information; and

locating positions of reflection according to the optical reflection alarm information being stored.

However, notice that Liu employs OTDR pulses for fault detection (col. 9, l. 6) and fault location (col. 8, l. 66 – col. 9, l. 2). It is common practice in the art to locate a fault after some notification of its detection. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to use the information from reflected OTDR pulses to set an alarm that indicates a detected fault. One of ordinary skill in the art would have been motivated to do this so that one has some notification of when to employ fault location techniques. Accordingly, it would be obvious in the method of Liu to store an optical reflection alarm information (reflected OTDR pulses that indicate a fault detection alarm) and to locate positions of reflection according to the optical alarm reflection alarm information being stored (reflected OTDR pulses for fault location, OTDR shows positions of reflection).

Regarding claim 12, Liu discloses:

The optical switching method according to claim 11, wherein the step of storing the optical interconnection relationships includes steps of transmitting a switching command to an optical switching device according to a command from an operation control unit (control by controller 508).

Liu does not expressly disclose:

multistage-connected optical switching devices;

after completing the necessary settings for switching of the optical switching devices, updating the contents of the optical interconnection relationships being stored based on switching information transferred from the optical switching device.

However, obvious variations of optical cross-connect switches, such as OCCS 506 in Fig. 5 of Liu, are known to comprise multistage-connected optical switching devices. A common motivation for such variations is to employ simpler and cheaper modular switching structures rather than a single, complex, expensive, monolithic switching unit.

Additionally, it is an obvious step to, after completing the necessary settings for switching of the optical switching devices, update the contents of the optical interconnection relationships being stored based on switching information transferred from the optical switching device. One of ordinary skill in the art would have been motivated to do this to know the current status of the optical interconnection relationships so that one knows which inputs connect to which outputs.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Welsh et al. is cited to show an optical switch that employs reflections to ensure coupling of light beams into output waveguides.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK


KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER